

FIG.1

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1 GGTCTCTGGAGCGCCCTGGGTTGCCCCGGCCGGTCCCTGCCGCTGACTTGTTGACACTGCC
 61 AGCACTCAGTCCCTCCCGCGCGCCTCCTCCCCGCGCCCGCCGCTCCTCCTCCCTGT
 121 ACATGCCATAGTGC GCCTGCGACCACACGGCCGGGGCGCTAGCGTTTCGCTTCAGCCACC
 181 ATGGGGAATGGGATGAACAAGATCCTGCCCGGCCTGTACATCGGCAACTTCAAAGATGCC
 M G N G M N K I L P G L Y I G N F K D A 20
 241 AGAGACGCGGAACAATTGAGCAAGAACAAGGTGACACATATTCTGTCTGTCCATGATAGT
 R D A E Q L S K N K V T H I L S V H D S 40
 301 GCCAGGCCTATGTTGGAGGGAGTTAAATACCTGTGCATCCCAGCAGCGGATTCAACATCT
 A R P M L E G V K Y L C I P A A D S P S 60
 361 CAAACCTGACAAGACATTTCAAAGAAAGTATTAAATTCATTACGAGTGCCGGCTCCGC
 Q N L T R H F K E S I K F I H E C R L R 80
 421 GGTGAGAGCTGCCTTGTA CACTGCCTGGCCGGGGTCTCCAGGAGCGTGACACTGGTGATC
 G E S C L V H C L A G V S R S V T L V I 100
 481 GCATACATCATGACCGTCACTGACTTTGGCTGGGAGGATGCCCTGCACACCGTGCGTGCT
 A Y I M T V T D F G W E D A L H T V R A 120
 541 GGGAGATCCTGTGCCAACCCCAACGTGGGCTTCCAGAGACAGCTCCAGGAGTTTGAGAAG
 G R S C A N P N V G F Q R Q L Q E F E K 140
 601 CATGAGGTCCATCAGTATCGGCAGTGGCTGAAGGAAGAATATGGAGAGAGCCCTTTGCAG
 H E V H Q Y R Q W L K E E Y G E S P L Q 160
 661 GATGCAGAAGAAGCCAAAAACATTCTGGGTAAATATAAGGAGCAAGGGCGCACAGAGCCC
 D A E E A K N I L G K Y K E Q G R T E P 180
 721 CAGCCCGGCGCCAGGCGGTGGAGCAGTTTTCCGGCACTGGCTCCGCTGACCTACGATAAT
 Q P G A R R W S S F P A L A P L T Y D N 200
 781 TATACGACGGAGACCTAACGCAAGCGACCTGCTGCCTTCCTTCCCACTGCTTGTCTTCAG
 Y T T E T * 205
 841 TGTGCCCCGGCTGGGCAGGGTGCGGTGGTGGTGGCCGATGAGACAGGAAAGGGAGATAGCC
 901 AGGGCGAGGTGGGGCGAGGGCTCTTTCCCCAAGCAACACCGCCCGAGCCTTGTTCCAGGC
 961 CCTTGCACTCCGCCCACCCTACCTGGCTGCACCTGAGCTTGCTGCCCCCGGGGATGTTGC
 1021 CCAGTGGCTGTGCACTGCTCTGTGCACGTGCGTGTGTGTGAGTGCACTTGTGTGTGGGTG
 1081 ACTAAGTGGATGCATGTGTGTGCTGTGTGAGTGAGGGTATGTGCACCTAAGTGTGTACA
 1141 TGTGTGTATGTTGTGAAAGTGTCTGTGCACATGAATGTTTGTGTGAGTGTGAACTCTTTC
 1201 TTACTGCTGGAAGTCACA 1218

FIG.2

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1 AGCCCGGCGCGGCCATGGGGAGTGGGATGAGCCAGATCCTGCCGGGCCTGTACATTGGCA
M G S G M S Q I L P G L Y I G N 16
61 ACTTCAAAGACGCAAGAGATGCAGAACAGTTGAGCAGGAACAAGGTGACACACATTCTTT
F K D A R D A E Q L S R N K V T H I L S 36
121 CTGTGCACGATACTGCCAGGCCCATGTTGGAGGGAGTTAAATACCTGTGTATTCCAGCGG
V H D T A R P M L E G V K Y L C I P A A 56
181 CAGACACACCATCTCAAACCTGACAAGACATTTCAAAGAAAGCATTAAATTCAATCATG
D T P S Q N L T R H F K E S I K F I H E 76
241 AGTGCCGACTCCAGGGTGAGAGCTGTCTGTACATTGCCTGGCTGGGGTCTCCAGGAGTG
C R L Q G E S C L V H C L A G V S R S V 96
301 TGACATTGGTGATCGCATACATCACGACTGTCACCGACTTTGGCTGGGAAGATGCCTTGC
T L V I A Y I T T V T D F G W E D A L H 116
361 ACACTGTTCTGTCGGGGAGGTCTGTGCCAACCCCAACCTGGGCTTTCAAAGGCAGCCGC
T V R A G R S C A N P N L G F Q R Q P Q 136
421 AGGAGTTTGAGAAACATGAAGTGACACAGTATCGGCAATGGCTGAGAGAAGAGTATGGAG
E F E K H E V H Q Y R Q W L R E E Y G E 156
481 AGAACCTTTGCGGGATGCAGAAAGCCAAAAATATTCTGGGTAATATAAGAGCAAG
N P L R D A E E A K N I L G K Y K E Q G 176
541 GCGCATGGAGCCCCGGCCTAGCAGCAGGCGGTGGAGCAGCTTCTCAACCCTGCCTCCTC
R M E P R P S S R R W S S F S T L P P L 196
601 TCACCTACAATAACTACACAACAGAGACCTAACAGAGAGAGCTGGTGTCTGCCTTCCTGC
T Y N N Y T T E T * 205
661 TCGGGTCTTCTGGGTTGCCTACCATGTGCTGGTGCCTGGTGTGCTGGCTCCTGCCTC
721 TGAGGACTACGAGAGGAGGTGCGCAGCAAGGTGGAGCACTCAGGGCTCCTTCTCAGAATAC
781 CGCCCTACTCAGGCTTTTTCACCTCTCCCATCTTCGCCCCATCTTTTCTCACCTGAACCT
841 GCCCAACCTGGGATGCTGCCCCGCCACCGTGTACTTCTCGTATGTGTGCAGGCGTGTGGA
901 TGTGCATGTATGTGTCTAAGAGTGTGCATATATACCTACAAATGTATGCATTGTGAACAA
961 GTACACATGTAAATGTGTCTCTGCATGTGGGCACTGAGTGTATGGTGCTGAAAGTTAT
1021 AAACACCCGCTGCCAGAAGTGCATGGTGCATTGTTCAATCCACATGGAAGTCATTG
1081 AACTTGGCCTCCTGGAAAGCTACTCCACCAAGTACAGCTTATGCCTGTGCTGAGTGAGAG
1141 CTCAGGGTGTGGGCAGCTGGAAACAGTGGTGTTCAGATTCTGAGATGGCACAGAGGAAG
1201 GGACAGGACCCTCCTGAGGAAGAGTGGCATAATCCTAGTGAGTTTTATGTCTGTGGGAAC
1261 AAGGGAGGGGCTTTCTGAGCACTGTCTGGACTTGATAAGTATACTTGCCAGCCGTCAT
1321 GGCCCTGAGTTCACCTGGTGCCTGCTCTGCGTGGGACCAGCGTCATTGACTTTTCATGGT
1381 GATATGGTATGGTGACAGGGTGGACCTGAGACTCAGTAGGCCTATACCAGAGGTCTGGCC
1441 CACTCCTGTCTGCTTTTAAACACTTAGCTCTGGCTTAGCTCTTGTGTCAGGGGTCTCAT
1501 CTCAGGTTTGCATGTACCTGCAGGAAGTGGAAAGAAAGGCAGTTATTAACTCCATAGCC
1561 ATTTGTGATTTAAATGCCTACGCATTCAGTCTGAGCTCACTGTTGTATGCTGTGGATTTGA
1621 CCGCTACCTCATGAAGTTCTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCT
1681 TCCT
1741 CATAGTTGAGAATGTTTGTCTATGTGACTATTGTTTTTGAACCAAAGAGAAGAGCATACT
1801 TATGTCATTGAGTGATTTAAATTTGCAGCTTGGCTTCTGTAGGGTTTTCTAGTGAGTCA
1861 AACCTACATTCTGACCATGAGAGTCTTAGTTCAAAGTATGTGGCAGCAGGCACCCCTAG
1921 AAGTTTTGCACAGTCCAGTGTCCAGTCTTTATGCCAATTCAGTTGCTTAAGCATGCAG
1981 GACCATGCAAATGAAAAATACACTCAACCTCTCCCTAAACGTACTGTGACCAGGCATCTC
2041 TGAAGCTTAAGAAACCCCAAGAGCCCCGAGGAGCTGGACAGTGGTGGCACACACCTT
2101 TAATCCCAGCTTTTGGGAGGCAGAGGCAGGCGGATTCTGAGTTCAAGGCCAGCCTGGTC
2161 TACAGAGTGAGTTCAGGACAGCCAGGGCTACACAGAGAAACCCTGTCCCGAAAAACCAA
2221 AAAAAAAAAAAAAAAAAAAGGAGAAGCCCCCTGAGGAAGAAAGCAGCAGGCCTCTCTGTGT
2281 GTGTGGAGCTCTCAGGGACCCAGGGAAGGTGTGGTTGCCAGCTCTCTGTGTGACGGCCGT
2341 GCCAAGCAATAGCATGAGTGACGCCCTGAGTACCTGAGTATGTGTGACCGTGTATGAACAG
2401 CTGCATACCTTTCCATAGGTTCTCAACTGCTCTCAATTTTGTGGCCAGTAATGTTCTTTT
2461 TCCACAGCTGCTCCGGGAATTCTGAAGTACTGGGCCTTTCTCAGAAGACTGTAATGTACC
2521 TGAAGTTTCTGAAATATTGCAAAGTTTCAAGGCTGGTGTGCCAAAAAGAAAGTGATGTAA
2581 AGTTTTATTTTAAAGATCCAATAGTGATTTGTATACTTGTTTTTTTTTCATTTTAAACCA
2641 AATGCATGTATAATCATGTGGGAATATGTTAAGATCTATGGATATTCTGTAGCAAGAGAA
2701 ATATCTTTGCCTTAACTCCACTGCTGTGGTGTTCCTTGGACCTGACCGATGCTCATACA
2761 ATAATCTCAAGAGCCCTGTCTGTTTCGTAATAGTAACACTTCTCATGAACACTACCCAA
2821 GGAGGAAGCCTGCACCTGGGAAGTTGTGCAAGTGTGAGCTCTGCCCTCCTGTTAAGTTCTCC
2881 AGCTCTAGACATGTCTCTGGGTGTGTGTTTTATCTACTGGTGTATTCTATATGGTAGAA
2941 TTACCAAAAGCTATTCAAGATTTCTTAATAAAGGGCAAATCCCGGAATCTTTTGNTTTTTA
3001 CCCTGGAAGA 3010

[illegible]

FIG.3(b)

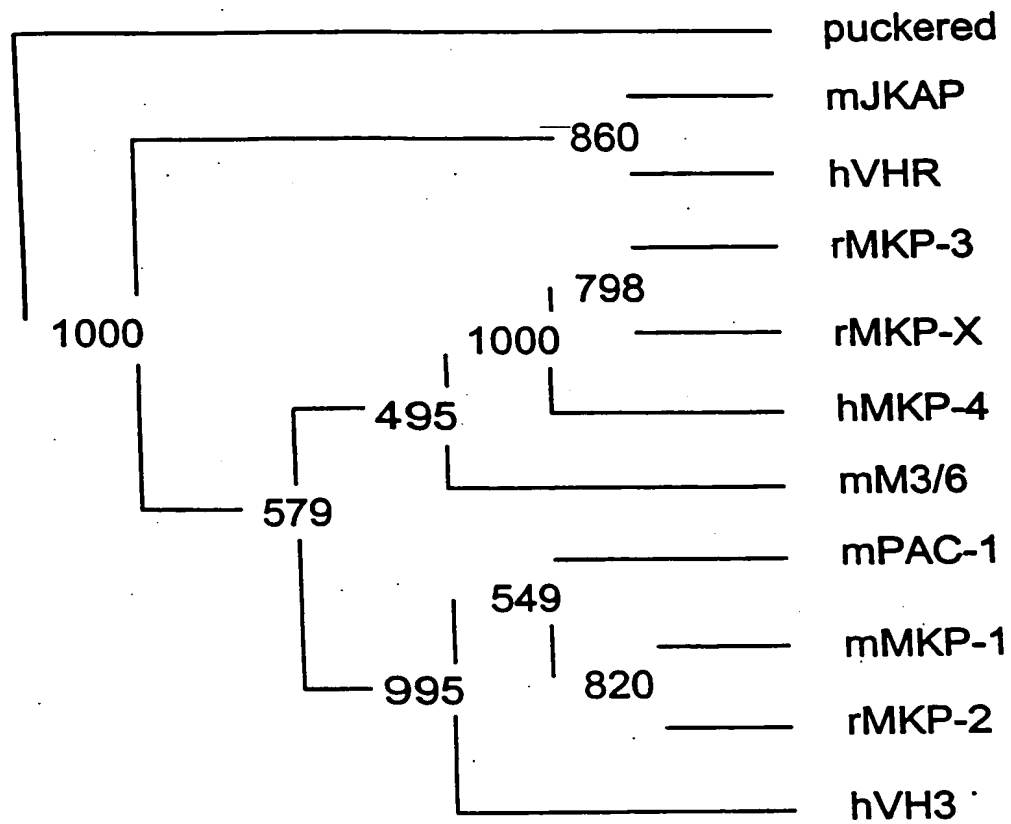


FIG. 3(c)

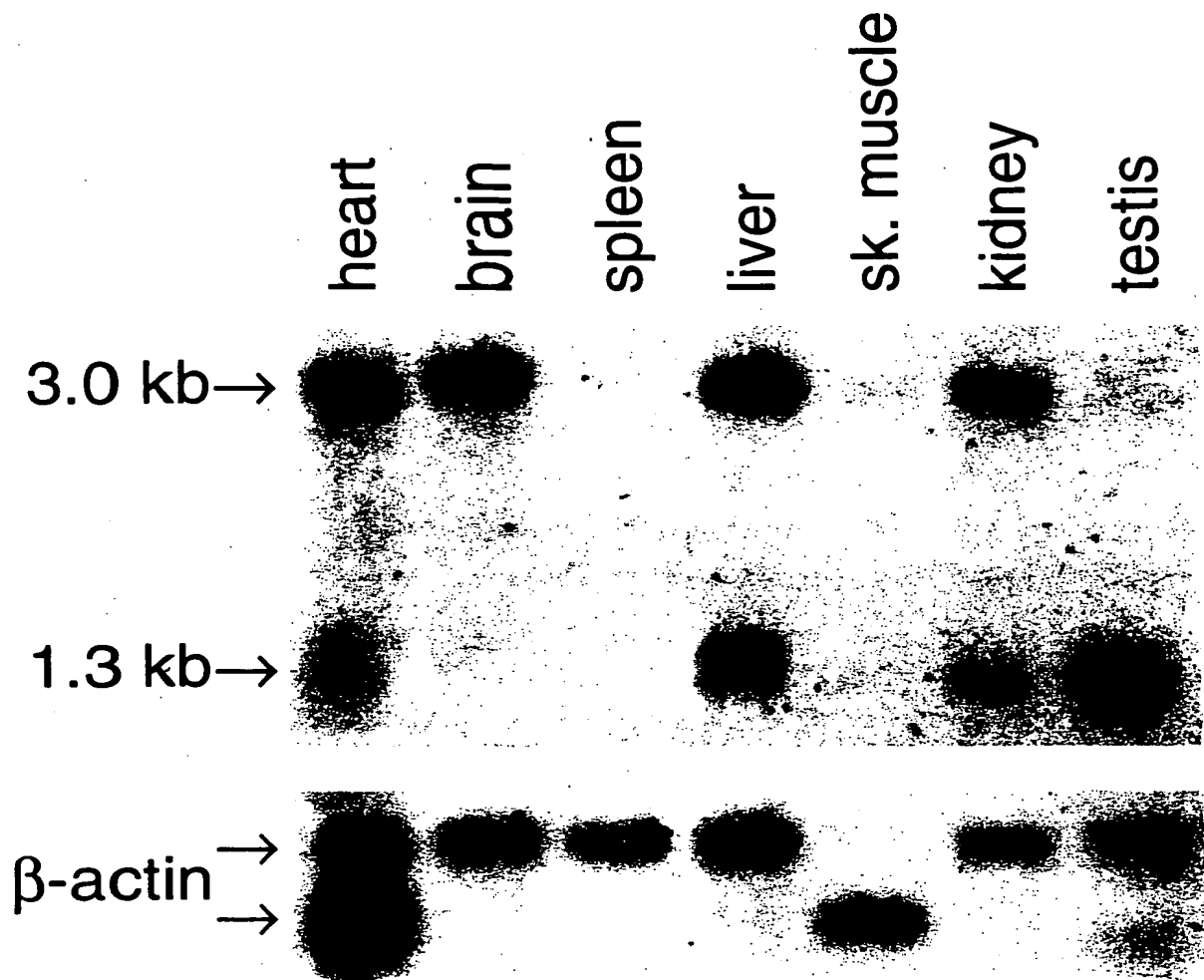
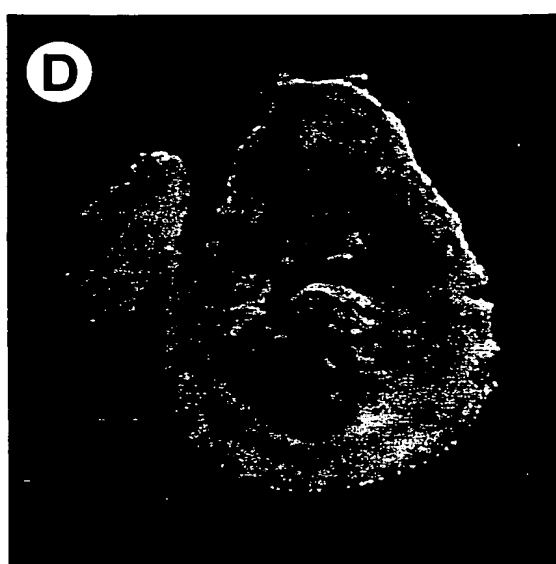
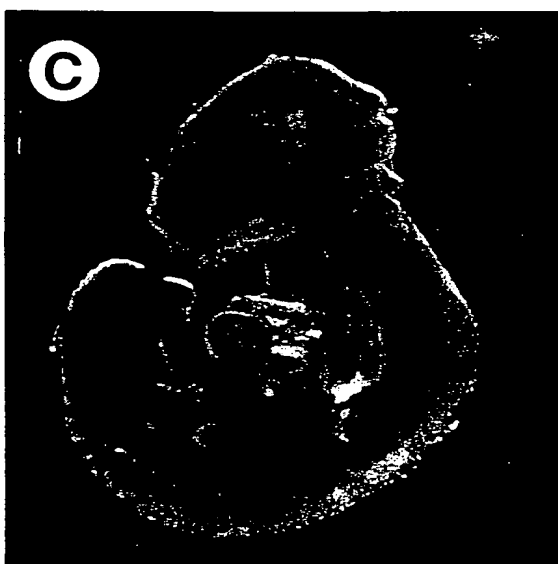
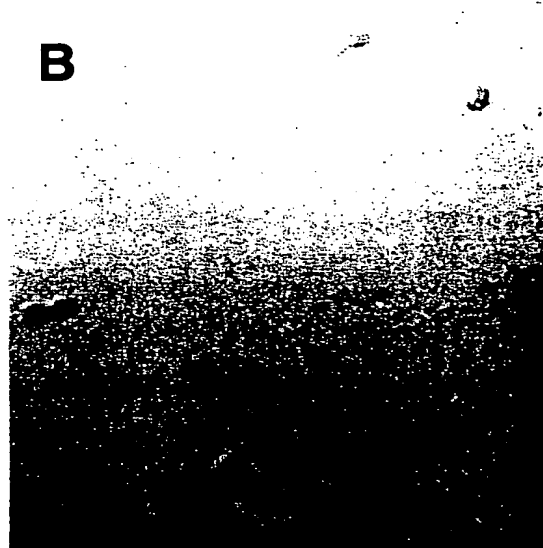
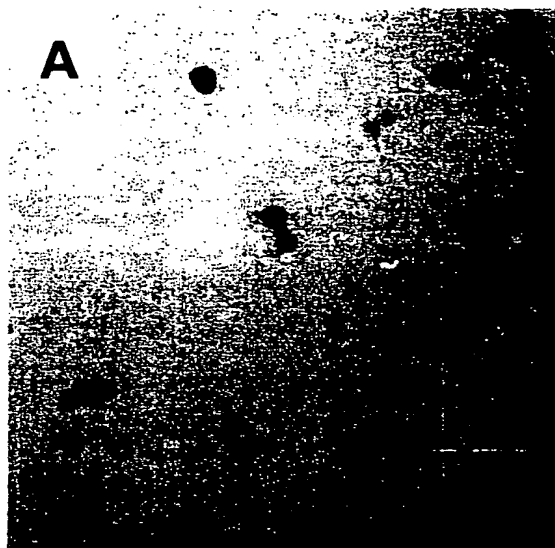


FIG.4

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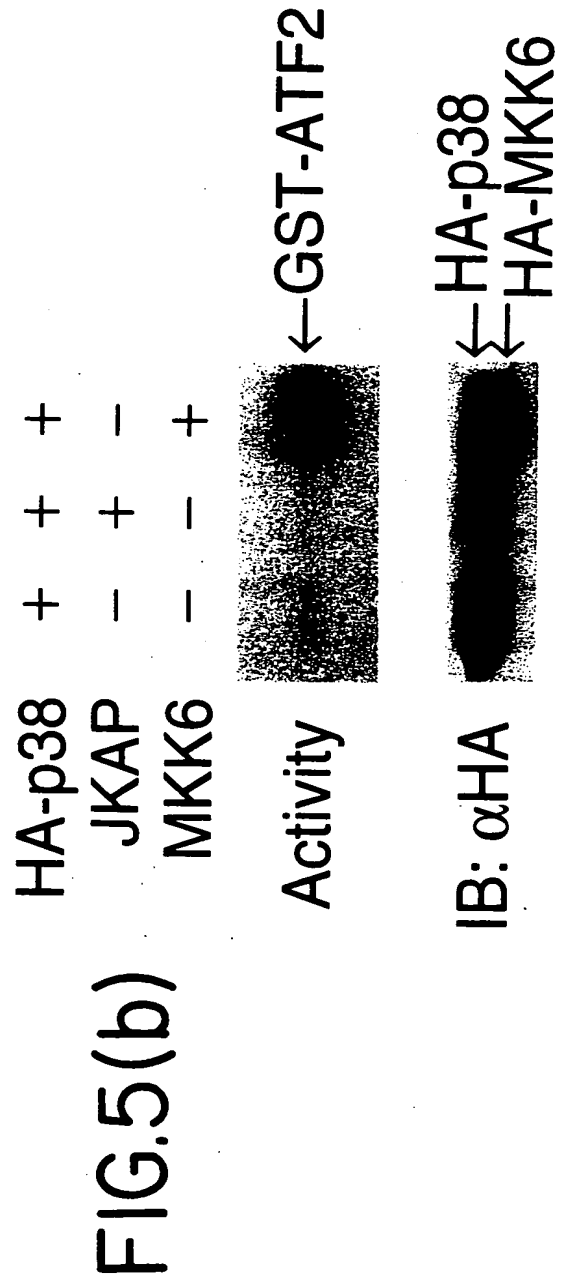
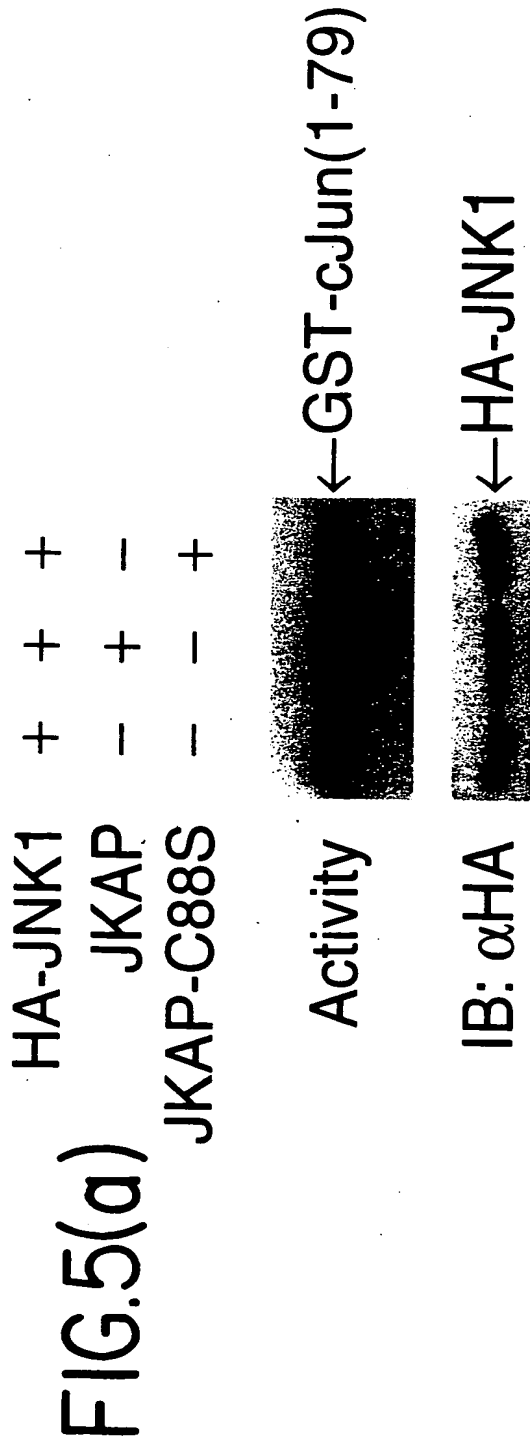


FIG.5(c)

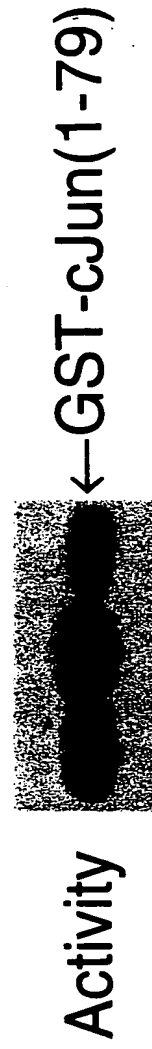
HA-ERK2	+	+	+
JKAP	-	+	-
Raf-BXB	-	-	+



IB: α HA ← HA-ERK2

FIG.5(d)

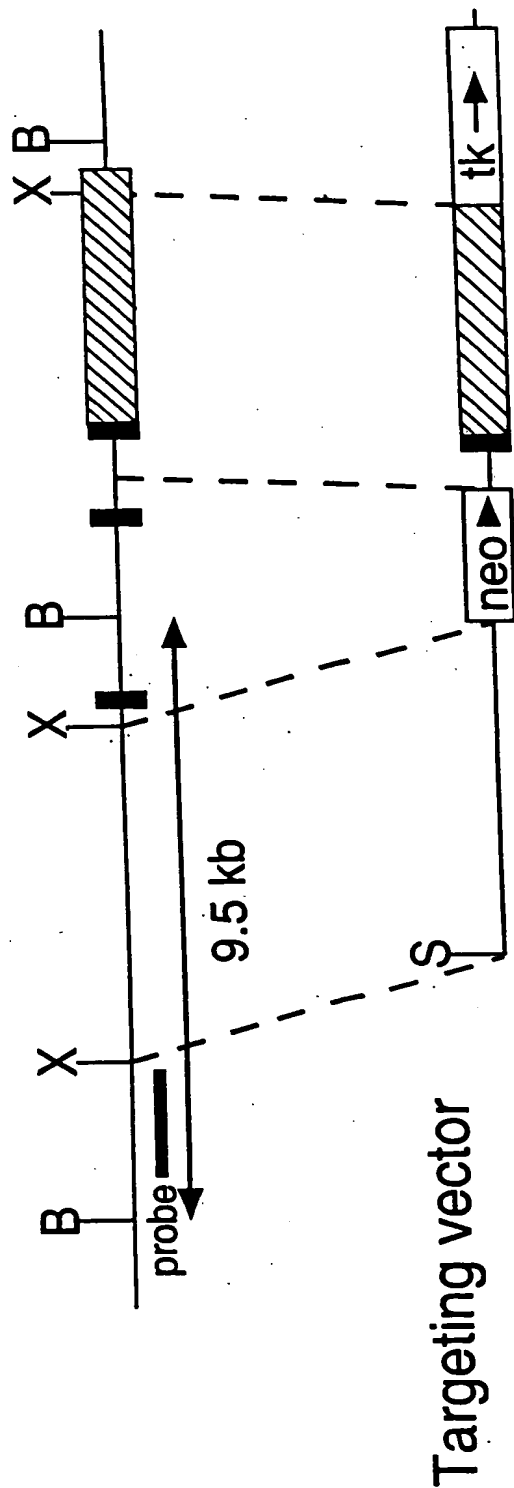
HA-JNK1	+	+	+
TNF- α	-	+	+
JKAP-C88S	-	-	+



IB: α HA ← HA-JNK1

FIG.6(a)

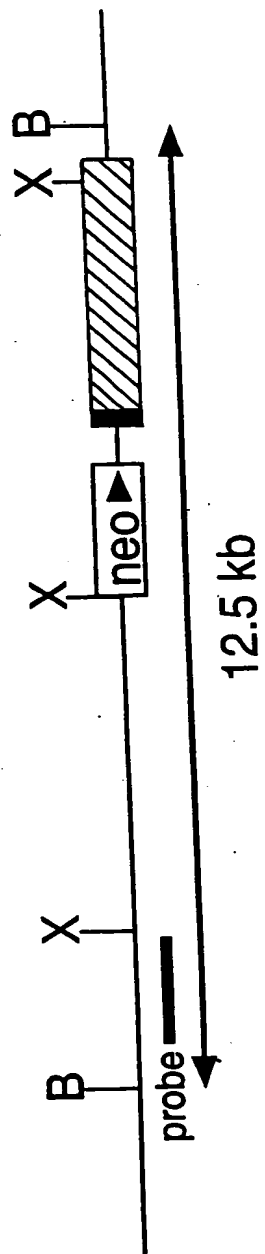
Jkap locus



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Homologous
recombination

Mutated *Jkap* locus



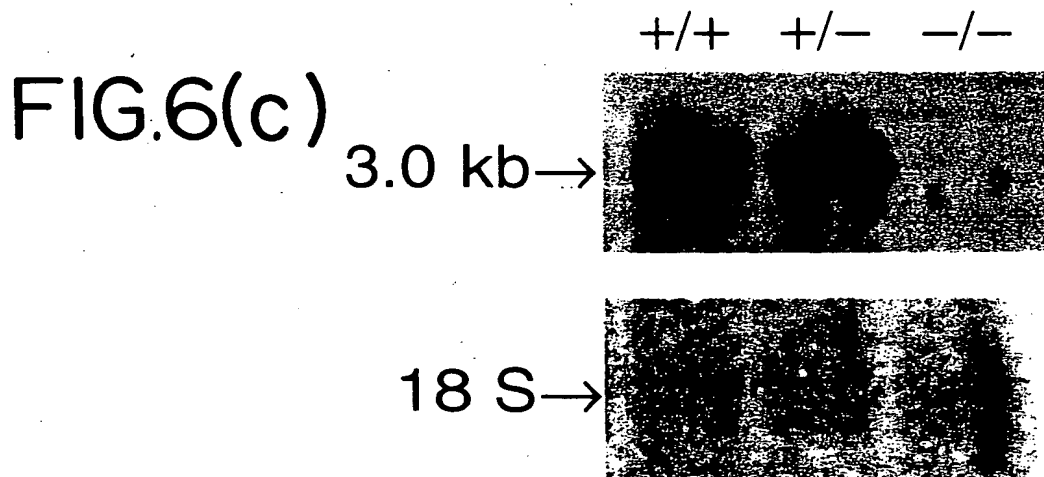
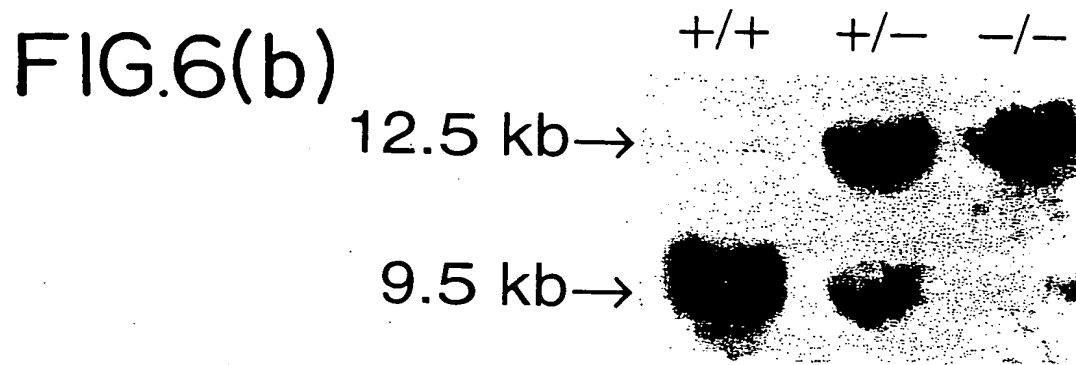


FIG.7(a)

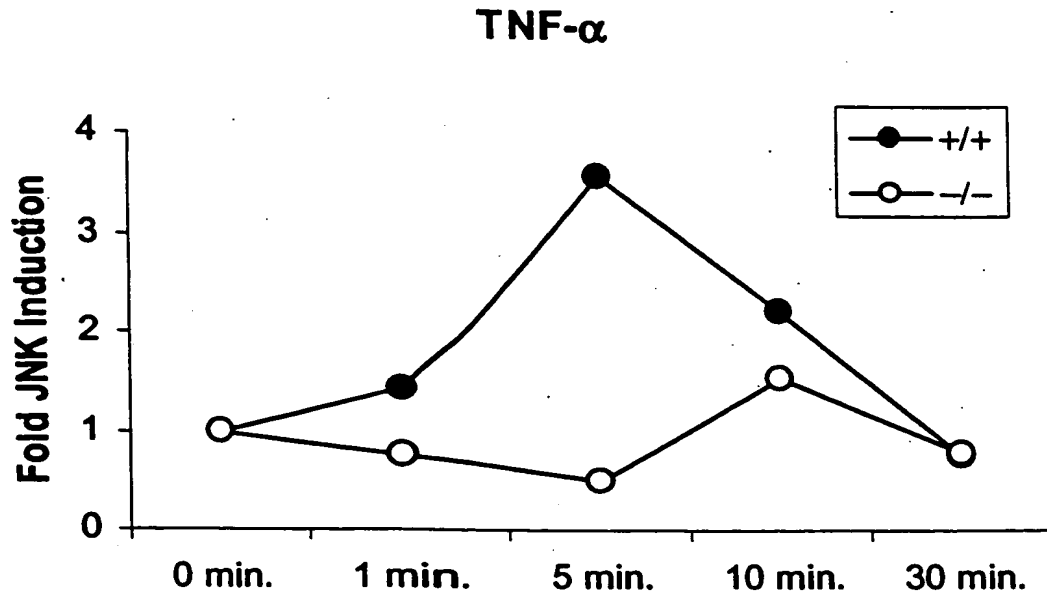


FIG.7(b)

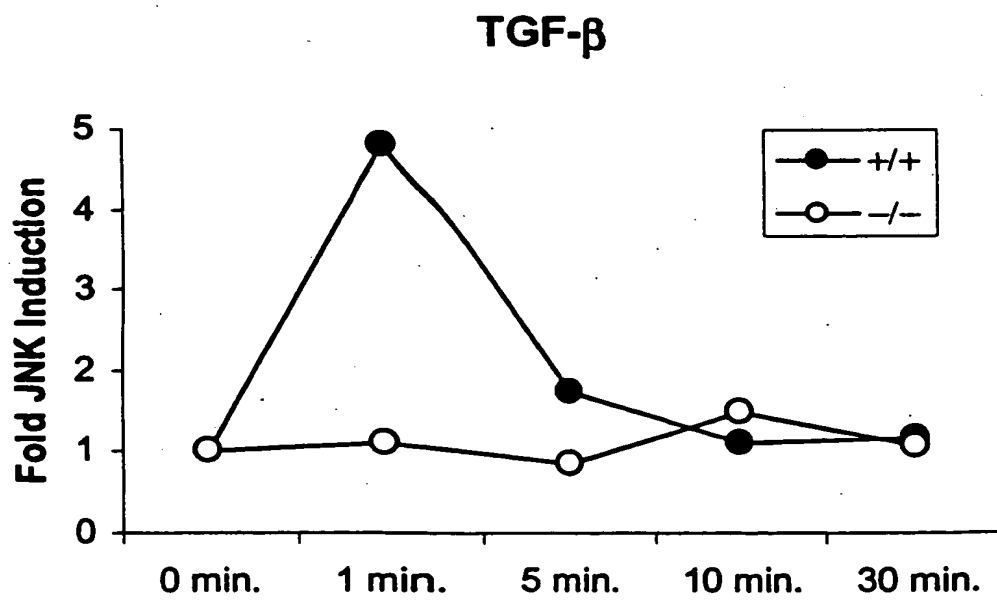


FIG. 7(c)

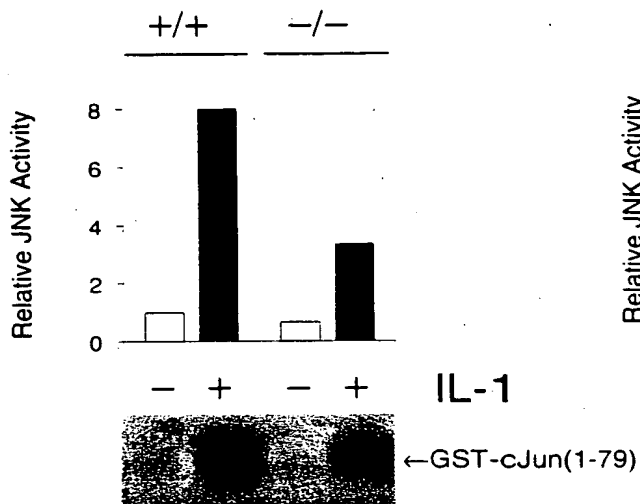


FIG. 7(d)

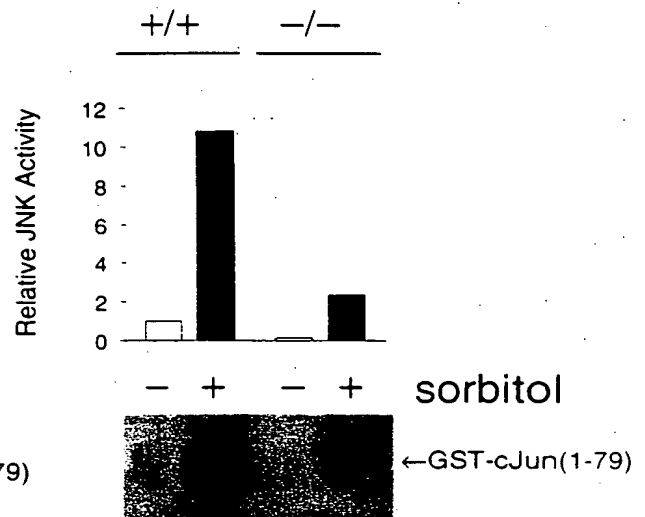


FIG. 7(e)

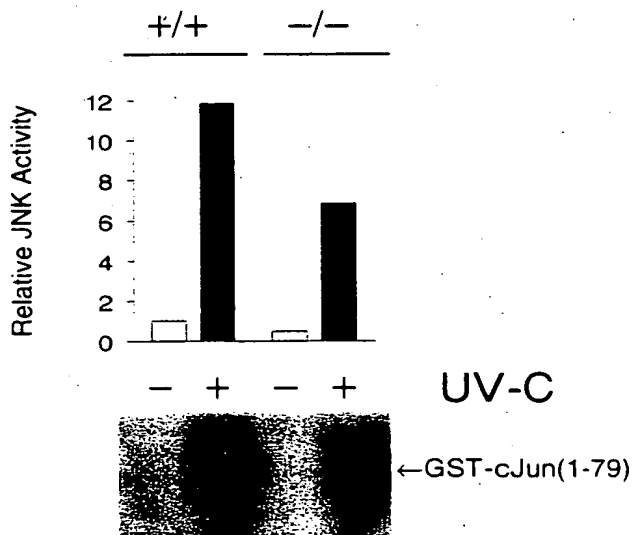


FIG. 7(f)

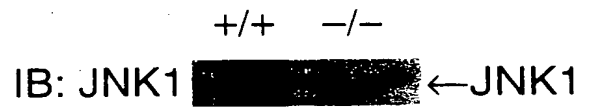


FIG.7(g)

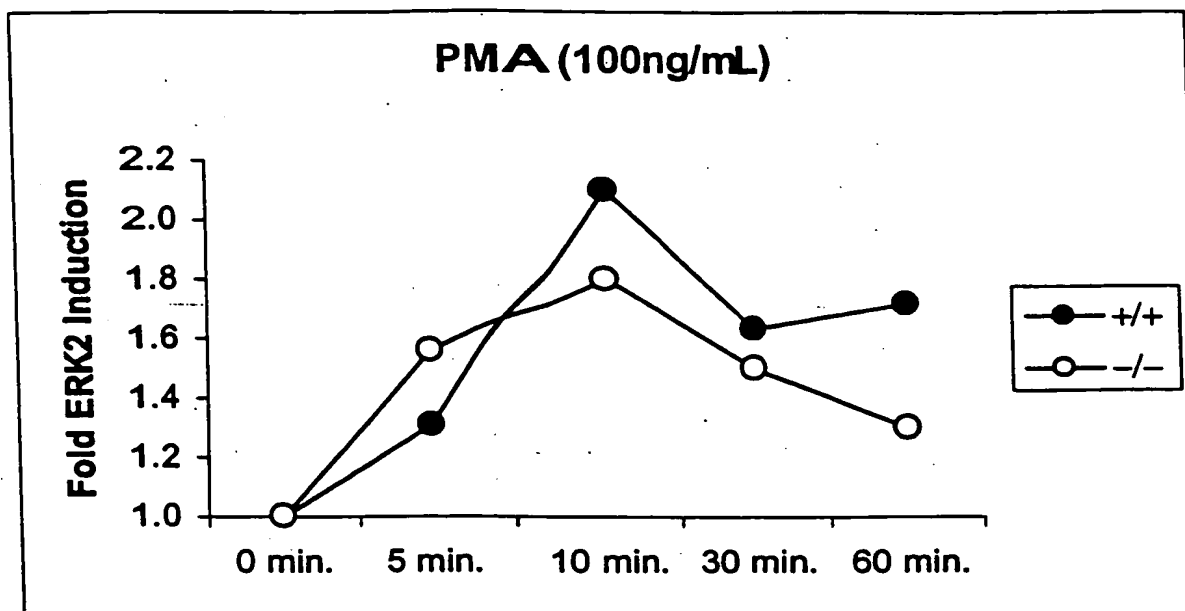


FIG.7(h)

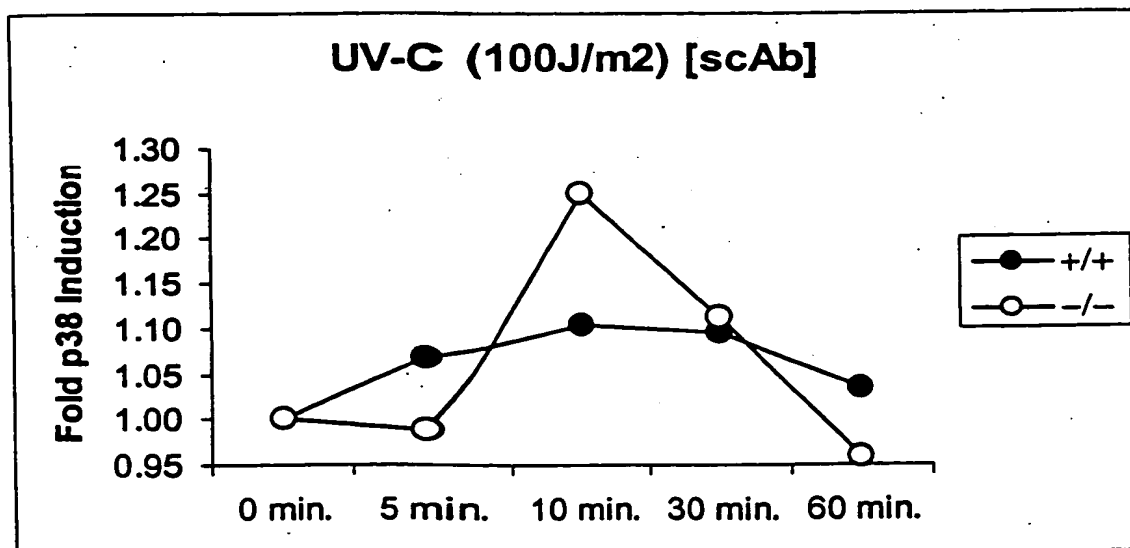


FIG.8(a) ^{14/15}

HPK1	—	+	+
<i>myc</i> -JKAP	—	—	+

IP: α HPK1
IB: α *myc*



← *myc*-JKAP

IB: α HPK1



← HPK1

FIG.8(b)

JKAP	—	—	+
HPK-1	—	+	+
HA-JNK1	+	+	+

Activity



← GST-cJun(1-79)

FIG. 8(c)

